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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,969

07/16/2007

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09952.0076

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04/27/2010

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EXAMINER

LAI, ANDREW

ART UNIT

PAPER NUMBER

2473

MAIL DATE

DELIVERY MODE

04/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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DETAILED ACTION***Examiner's Notes***

Regarding Amendment: Applicant filed amendment on 9/18/2009 upon a non-final rejection of 6/9/2009 provided previously by a different Examiner. In said amendment, Applicant cancelled previous claims 36 and 37 required featured the features in both claim 36 and claim 37 in current Independent claims 24 and 40, while previous claims would require the features in either claim 36 or claim 37. Therefore, amended claims 24 and 40 have different scopes than previous claims 24(or 40)+36+37.

Also, Applicant presented Remarks regarding said non-final rejection, arguing that prior arts applied therein failed to anticipate or render obvious the limitations in previous claims 36 and 37. Examiner of this Office Action acknowledges that the arguments thus made are persuasive. Applicant presented no arguments against previously applied references over any other limitations.

This Office Action will discuss the amended claims in view of the changed scope stated above with a newly found reference, mainly addressing the limitations in previous claims 36 and 37, both now in Independent claims 24 and 40. In order to minimize discontinuity (and possible ambiguities), and since Applicant presented no arguments against other limitations, the discussion, including contents and format, of said non-final rejection is repeated in this Office Action with "Times New Roman" font in writing, except those for the features in previous claims 36 and 37, which will be entirely addressed in a format different from the previous Examiner with "Arial" font in writing.

Regarding Bilski 101: Instant Application has process Claims 40-44 related to "A method". According to the latest (August 2009) *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101* issued by USPTO, said claims must be subject to a "Machine or Transformation (M-or-T) Test" and "using the broadest reasonable interpretation of the claim" to "identify a machine or transformation, either explicitly or inherently, in the claim".

It is hereby noted that said claims have passed the "M-or-T" test because the method as recited in Independent claim 40 requiring "*processing said static and dynamic network information...*" (emphasis added) is inherently tied to a particular machine, e.g., a network information processor required to process dynamically, and the use of the machine imposes a meaningful limit on the claim's scope and involves more than insignificant extra-solution activity.

Therefore, for the record, the method in said claims provides an eligible statutory process and no 101 rejection (Bilski) is made thereto.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 24-26, 40 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah (US 6,556,659, Bowman hereinafter) in view of Hou et al (US 6,324,184, Hou hereinafter).

Bowman discloses “Service Level Management System in a Hybrid Network Architecture” (Title). Specifically:

- **With respect to Independent claims**

Regarding claims 24 & 40, Bowman discloses *a system/method for the quality status analysis of an access network of a fixed network infrastructure, said access network comprising a plurality of cables, a set thereof supporting broadband transmissive systems* (See Col 18, line 47 – Col 19, line 21 & abstract, the service level agreement and failures with the network is checked to determine if the quality service is met), *comprising: an information acquisition module configured for drawing static network information stored in first data sources* (See Col 22; lines 41-49 & FIG. 1C-1, the Customer Interface Management 132 receives the service level agreement (Static Info's, i.e. number and location address)) *and dynamic network information relating to said broadband transmissive systems from second data sources* (See Col 22; lines 17-25 & FIG. 1B-1, Network Data Management 130 receive data related to usage and events (Dynamic Info's, i.e. monitoring, performance goals, capacity request and etc)); *and an information processing module configured for: collecting said static and dynamic network information from said information acquisition module* (See Col 2; lines 50-67 & FIG. 1D, the Network Data Management 130 and the Customer Interface Management 130 are used to give information to the Customer Quality of Service Management Process 134); *and processing said static and dynamic network information to obtain at least one index* (See Col 22; lines 50-67,

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the Quality of Service Management Process 134 encompasses monitoring, managing and reporting of quality service. In addition, it reports performance of a service against Service Level Agreement (index representing the quality status of the access network).

It is noted that, when disclosing above discussed *to obtain at least one index*, Bowman does not expressly disclosing to obtain at least *a geometric saturation index indicative of a degree of use of said cables in terms of said broadband transmissive systems supported by said cables and a transmissive saturation index indicative of a transmissive status of said cables in terms of a bit rate of broadband transmissive systems supported by said cables* (emphasis added to emphasize that both *indexes* are required, as amended, as opposed to previous claims requiring one or the other).

However, to obtain both of such *indexes* in systems/networks similar to that of Bowman has been known in the art at the time of instant invention, as can be seen in Hou.

Hou discloses an invention for “Dynamic Bandwidth Allocation [DBA hereinafter – Examiner notes] for a Communication Network” (Title), “such as a multichannel hybrid fiber coax (HFC) cable television system” (col. 3 lines 17-18), wherein (ig. 2) *transmissive systems* (“subscriber units”) communicate with *a fixed network* (“wide area network 225”, col. 3 line 59) via *an access network* (“central controller 210” which provides “access [to] various resources”, col. 3 lines 58-60) using *cables* (“cable 240, 242 and 244”, col. 3 line 49), and wherein the “DBA” is performed in “successive control intervals” (col. 2 lines 8-9).

Hou's invention comprises, in each "control interval", obtain at least a *geometric saturation index* ("a ratio $K=C(i)/B(i)$ is computed", col. 9 line 48) *indicative of a degree of use of* (for the " $K=C(i)/B(i)$ " cited above, " $C(i)$ is the number of slots that the current user actually used to transmit data ... over the control interval", col. 9 lines 51-52, and " $B(i)$ is the number of slots ... assigned to the user for the control interval", col. 9 lines 54-56, therefore, " $K=C(i)/B(i)$ " is *indicative of a degree of use of* said cables (e.g., fig. 2 cables "240-244", and therefore " K " is a *geometric saturation index* because based on the definition of " $C(i)$ " and " $B(i)$ ", $K \leq 1$, meaning the closer K is to 1, the more *saturated* the cables are) *in terms of said broadband transmissive systems supported by said cables* (e.g., fig. 2 "subscriber units 1-X", i.e., items "250-254" supported by cables "240-244") and a *transmissive saturation index* ("available bandwidth, $BWA(j)$ ", which is a summation of "the reduction in the assigned bandwidth, $B(i)-C(i)$ " because the latter "is added to the pool of" the former, col. 10 lines 8-10) *indicative of a transmissive status of said cables* (" $BWA(j)$... indicates the amount of unallocated bandwidth available in a given control interval", col. 9 lines 36-38, which "amount of unallocated bandwidth available" gives a *transmissive status* as well as is a *saturation index* for said "control interval" because the smaller the " $BWA(j)$ " the less the bandwidth or the more the channels are *saturated* and thus the worse the *transmissive status*) *in terms of a bit rate* (e.g., " $BWA(j)$ is 40 slots", col. 10 line 53, wherein "Slot size is defined in terms of the number of timebase reference counts (e.g., ticks) the slot occupies." and "The reference tick is used to measure the passage of time for upstream transmission for a bit or a group of bits", col. 4 55-58, which indicates that "slots" give a measure of *bit rate*) of

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broadband transmissive systems supported by said cables (e.g., fig. 2 “subscriber units 1-X”, i.e., items “250-254” *supported by cables* “240-244”).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bowman by adding Hou’s determining both indexes discussed above “In order to efficiently implement a practical upstream channel ... to allow the central controller [corresponding to Applicant claimed *access network*, - Examiner notes] to allocate bandwidth ... according to the current subscriber [corresponding to Applicant claimed *transmissive system* – Examiner notes] demands” (Hou, col. 1 lines 53-56).

- **With respect to Dependent claims**

Regarding claim 25, the combination of Bowman and Hou discloses: *a system wherein said dynamic information comprises transmissive parameters associated with said broadband transmissive systems* (Bowman: FIG. 1B, the Network Data Management 130 comprises dynamic info’s, i.e. monitoring, performance goals, capacity request and etc).

Regarding claim 26, the combination of Bowman and Hou discloses: *a system wherein said static network information comprises at least information about a structure of said access network* (Bowman: FIG. 1C, the Customer Interface Management 132 comprises static info’s, i.e. number and location address).

Regarding claims 45 & 46, the combination of Bowman and Hou discloses: *A fixed network infrastructure/a program for an electronic computer and comprising program codes to implement, comprising an access network comprising a plurality of cables, a set thereof supporting broadband transmissive system, and a system for analyzing the quality status of said*

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access network implemented; an information acquisition module configured for drawing static network information stored in first data sources (Bowman: See Col 22; lines 41-49 & FIG. 1C-1, the Customer Interface Management 132 receives the service level agreement (Static Info's, i.e. number and location address)) and dynamic network information relating to said broadband transmissive systems from second data sources (Bowman: See Col 22; lines 17-25 & FIG. 1B-1, Network Data Management 130 receive data related to usage and events (Dynamic Info's, i.e. monitoring, performance goals, capacity request and etc)); and an information processing module configured for: collecting said static and dynamic network information from said information acquisition module (Bowman: See Col 22; lines 50-67 & FIG. 1D, the Network Data Management 130 and the Customer Interface Management 130 are used to give information to the Customer Quality of Service Management Process 134); and processing said static and dynamic network information to obtain at least one index representing said quality status of said access network (Bowman: See Col 22; lines 50-67, the Quality of Service Management Process 134 encompasses monitoring, managing and reporting of quality service. In addition, it reports performance of a service against Service Level Agreement (index representing the quality status of the access network)).

3. Claims 27-30, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman in view of Hou, as applied to claims above, and further in view of Cruickshank et al (US 2003/0126256, Cruickshank hereinafter).

Bowman in view of Hou discloses claimed limitations in section 2 above. Further:

Regarding claim 27, Bowman in view of Hou discloses all the limitation of the independent claim 24 except *wherein said second data sources comprises network apparatuses*,

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each network apparatus being configured for handling traffic coming from the cables connected thereto.

However, Cruickshank teaches a system wherein said second data sources comprises network apparatuses, each network apparatus being configured for handling traffic coming from the cables connected thereto (See FIG 1; network monitor 26, it connects traffic coming from the access network through the internet/intranet).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to further employ the teaching system of Bowman within Cruickshank system in order to get data regarding the network performance in a user friendly manner through the network to the network monitor (Cruickshank: See page 3; Para. 0026).

Regarding claim 28, the combination of Bowman, Hou and Cruickshank disclose *a system wherein said first data sources comprise network inventories* (See Cruickshank FIG. 2, each nodes 34, 36 & 38 comprises database 58 to process/acquire information).

Regarding claim 29, the combination of Bowman, Hou and Cruickshank disclose *a system wherein said information acquisition module comprises an access interface to access said first data sources* (See Cruickshank FIG. 1; Application Suite 22).

Regarding claim 30, the combination of Bowman, Hou and Cruickshank disclose *a system wherein said information acquisition module comprises a data access portion configured to access said second data sources* (See Cruickshank FIG. 1; Nodes 34, 36, 38).

Regarding claim 36, the combination of Bowman, Hou and Cruickshank disclose *a system wherein said index is a geometric saturation index indicative of the degree of use of said*

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cables in terms of supported broadband transmissive systems (See Cruickshank Page 3; Para. 0007 & 0022, values related to network topology).

Regarding claim 37, the combination of Bowman, Hou and Cruickshank disclose *a system wherein said index is a transmissive saturation index indicative of the transmissive status of said cables in terms of bit rate of the support broadband transmissive systems* (See Cruickshank Page 3; Para. 0007 & 0022, values related to network impact).

Regarding claim 38, the combination of Bowman, Hou and Cruickshank disclose *a system comprising an interface for accessing a network operator* (See Cruickshank FIG. 1, controller, 40).

Regarding claim 39, the combination of Bowman, Hou and Cruickshank disclose *a system comprising a database in which are stored the results obtained by the analysis system* (See Cruickshank FIG. 2, each nodes 34, 36 & 38 comprises database 58 to process/acquire information).

4. Claims 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman in view of Hou, as applied to claim 40 above, and further in view of Kobayashi et al (US 7,142,512, Kobayashi hereinafter).

Bowman in view of Hou discloses claimed limitations in section 2 above. Further:

Regarding claim 41, Bowman in view of Hou discloses all the limitation of the independent claim 40 except *wherein said step of remotely accessing said second data sources to draw dynamic network information associated with said broadband transmissive systems comprises the steps of: generating a plurality of blocks of commands requesting to measure said dynamic network information associated with said broadband transmissive systems; organizing*

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said blocks of commands in parallel sessions, each session being associated with one or more data sources located in a specific portion of said fixed network infrastructure; and sending a specific block of commands included in a specific session to a specific data source located in said specific portion of said fixed network infrastructure.

However, Kobayashi discloses a method wherein said step of remotely accessing said second data sources to draw dynamic network information associated with said broadband transmissive systems comprises the steps of (See Col 7; lines 38-44, dynamic information's): *generating a plurality of blocks of commands requesting to measure said dynamic network information associated with said broadband transmissive systems* (See FIG. 10 & Col 8; line 58 – Col 9; line 6, control command 1001 receives commands from the control server to get data from the meters which are dynamic information's, i.e. packet loss, a jitter and the like); *organizing said blocks of commands in parallel sessions, each session being associated with one or more data sources located in a specific portion of said fixed network infrastructure* (See FIG. 10 & Col 8; line 58 – Col 9; line 6, Control Command Receiver 1001 receives the command from the control server and send the commands to the router controller 1002 as well as QoS controller); *and sending a specific block of commands included in a specific session to a specific data source located in said specific portion of said fixed network infrastructure* (See FIG. 10 & Col 8; line 58 – Col 9; line 6, the QoS instruct both the receiver and transmitter to control the quality service when relaying).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to further employ the teaching method of Bowman within Kobayashi

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method in order to assure the quality of communication service more accurate (Kobayashi: See Col 3; lines 18-34).

Regarding claim 42, the combination of Bowman, Hou and Kobayashi discloses *a method wherein said step of sending a specific block of commands included in a specific session to a specific data source located in said specific portion of said fixed network infrastructure comprises the steps of: querying a communication bus configured for receiving said blocks of commands (Kobayashi: See FIG. 10 & Col 8; line 58 – Col 9, the control server instruct the router or QoS controller to receive and execute the commands) and selecting among a plurality of communication handlers the one whereto said specific block of commands is to be sent (Kobayashi: See FIG. 10 & Col 8; line 58 – Col 9, the QoS controller select a queue the commands to be sent); each handler being configured to handle communication between said communication bus and said one or more data sources by controlling communication channels managed by said data sources (Kobayashi: See FIG. 10 & Col 8; line 58 – Col 9, the QoS controller specifies a queue to be allocated (communication channel) to each flow).*

Regarding claim 43, the combination of Bowman, Hou and Kobayashi discloses *a method wherein said steps of accessing first and second data sources comprise a step of repeatedly accessing said first and second data sources (See Kobayashi Col 6; lines 16-30).*

Regarding claim 44, the combination of Bowman, Hou and Kobayashi discloses *a method wherein said step of repeatedly accessing said first and second data sources comprises a step of periodically accessing said first and second data sources (See Kobayashi Col 6; lines 16-30).*

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5. Claims 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman in view of Hou and Cruickshank, as applied to claim 30 above, and further in view of Kobayashi.

Bowman in view of Hou and Cruickshank discloses claimed limitations in section 3 above. Further:

Regarding claim 31, the combination of Bowman, Hou and Cruickshank discloses all the limitations of dependent claim 30 except *wherein said data access portion comprises: a plurality of blocks of commands requesting the measuring of said dynamic network information associated with said broadband transmissive systems said blocks of command being organized in parallel sessions, each session being associated with one or more data sources located in a specific portion of said fixed network infrastructure; a plurality of handlers, each handler being configured to handle communication with said one or more data sources by controlling communication channels associated with said one or more data sources; and an adaptive controller configured for selecting among said plurality of handlers to one whereto a specific block of commands included in a specific session is to be sent.*

However, Kobayashi discloses a system wherein said data access portion comprises: *a plurality of blocks of commands requesting the measuring of said dynamic network information associated with said broadband transmissive systems* (See FIG. 10 & Col 8; line 58 – Col 9; line 6, control command 1001 receives commands from the control server to get data from the meters which are dynamic information's, i.e. packet loss, a jitter and the like) *said blocks of command being organized in parallel sessions, each session being associated with one or more data sources located in a specific portion of said fixed network infrastructure* (See FIG. 10 & Col 8;

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line 58 – Col 9; line 6, Control Command Receiver 1001 receives the command from the control server and send the commands to the router controller 1002 as well as QoS controller); *a plurality of handlers, each handler being configured to handle communication with said one or more data sources by controlling communication channels associated with said one or more data sources* (See FIG. 10 & Col 8; line 58 – Col 9; line 6, the QoS controller select a queue the commands to be sent); *and an adaptive controller configured for selecting among said plurality of handlers to one whereto a specific block of commands included in a specific session is to be sent* (See FIG. 10 & Col 8; line 58 – Col 9, the QoS controller specifies a queue to be allocated (communication channel) to each flow).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to further employ the teaching method of Bowman, Hou and Cruickshank within Kobayashi method in order to assure the quality of communication service more accurate (Kobayashi: See Col 3; lines 18-34).

Regarding claim 32, the combination of Bowman, Hou, Cruickshank and Kobayashi disclose *a system wherein each handler is configured for handling: compliance with the maximum number of communication channels which can be controlled simultaneously by a single data source* (See Kobayashi FIG. 13 & Col 9; lines 45-65, FIG. 13 (a) allocates bandwidth to a queue to adjust the number of output packets so as to control the bandwidth); *multiple access by multiple sessions to each data source* (See Kobayashi FIG. 13 & Col 9; lines 45-65, each flow uses different queue's); *and the priorities between said sessions* (See Kobayashi FIG. 13(b) & Col 10; lines 45-63, FIG. 13(b) provides control of quality service by priority).

Regarding claim 33, the combination of Bowman, Hou, Cruickshank, and Kobayashi disclose *a system wherein at least a handler comprises an apparatus handler configured for accessing the respective data source directly* (See Kobayashi FIG. 6 & Col 7; lines 11-44, the measure data receiver receives measurement data from the meters, i.e. dynamic information's), *said apparatus handler comprising a channel dispatcher to receive said blocks of commands from said communication bus, queue them in appropriate queues and send them to said data source through the communication channels managed by said data source* (Kobayashi: See FIG. 10 & Col 8; line 58 – Col 9; line 6, the QoS controller specifies a queue to be allocated (communication channel) to each flow).

Regarding claim 34, the combination of Bowman, Cruickshank, Hou and Kobayashi disclose *a system wherein said at least one handler comprises an element manager handler configured for accessing one or more data source through a management module of said data source* (See Kobayashi FIG. 6 & Col 7; lines 11-44, the measure data receiver receives measurement data from the meters, i.e. dynamic information's), *said element manager handler comprising; an apparatus dispatcher module to receive blocks of commands from said communication bus and queue them in appropriate queues differentiated by destination data source* (Kobayashi: See FIG. 10 & Col 8; line 58 – Col 9; line 6, the QoS controller specifies a queue to be allocated (communication channel) to each flow); *and a channel dispatcher module to check said queues and, for each queue, determine the next block of commands to be sent to the related management module, through the communication channels managed thereby* (See Kobayashi FIG. 13 & Col 9; lines 45-65, the network check the queue to see if a data can be allocated based on the remaining bandwidth).

Regarding claim 35, the combination of Bowman, Hou, Cruickshank and Kobayashi disclose *a system wherein said adaptive controller comprises a list of handlers* (Kobayashi: See FIG. 10 & Col 8; line 58 – Col 9; line 6, the controller server has a list of handlers such as Route Controller and QoS controller).

Response to Arguments

6. Applicant's arguments with respect to Independent claims 24 and 40 (and thus related to all Dependent claims) regarding the limitations incorporated therein from both previous, now cancelled, claims 36 and 37 have been considered but are moot in view of the new ground(s) of rejection.

It is hereby noted that Applicant's arguments (Remarks pages 9-14) are entirely directed to the limitations of previous claim 36 and claim 37 that are both incorporated into current Independent claims 24 and 40 and required to be met both. Since newly applied reference of Hou fully disclosed those argued limitations, Applicant's arguments are thus moot.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 7,126,914 discloses an DSL user capacity estimation method and apparatus for optimally configuring a DSL network by taking into account the maximum supported number of subscribers in view of subscribers required data communication rates, the number of actual subscribers and possible transmission "slowdown" rates.

US 6,469,986 discloses method and system for configuring a network management system considering both number of network devices that can be supported as well as their associated link capacities.

US 6,016,311 discloses adaptive TDD techniques for dynamic bandwidth allocation within a wireless network by optimally allocate time slots to wireless devices depending on the number thereof as well as their communication link bandwidth requirements.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW LAI whose telephone number is (571)272-

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9741. The examiner can normally be reached on M-F 7:30-5:00 EST, Off alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew Lai/
Examiner, Art Unit 2473

/KWANG B. YAO/

Supervisory Patent Examiner, Art Unit 2473